PHOTOGRAPHIC INTERPRETATION REPORT

[redacted]

AN-NING CHEMICAL PLANT CHINA

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AN-NING CHEMICAL PLANT, CHINA

SUMMARY

The An-ning Chemical Plant is a moderate-sized facility capable of producing caustic soda, chlorine, and related chemicals. The plant reportedly has produced benzene hexachloride, a chemical used as an insecticide, and phosphorus compounds used in fertilizer, insecticides, and other organic chemicals. Phosphorus and benzene hexachloride production cannot yet be confirmed by photography; however, a significant amount of new construction during late [redacted] may be indicative of a future capability for some if not all of these chemicals.

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INTRODUCTION

The An-ning Chemical Plant (24-54N 102-27E; [redacted] is located approximately 2 nautical miles (nm) southwest of An-ning in Yun-nan Sheng (Province), southwest China (Figure 1). According to a Chinese publication of March 1963, the plant is called the Yun-nan Chemical Works; it was constructed during 1958-1962 and began production on 1 July 1962. 1/ The plant reportedly produced caustic soda, chlorine water, hydrochloric acid, and "raw" benzene hexachloride, an insecticide commonly referred to as "666." 1, 2/ A second

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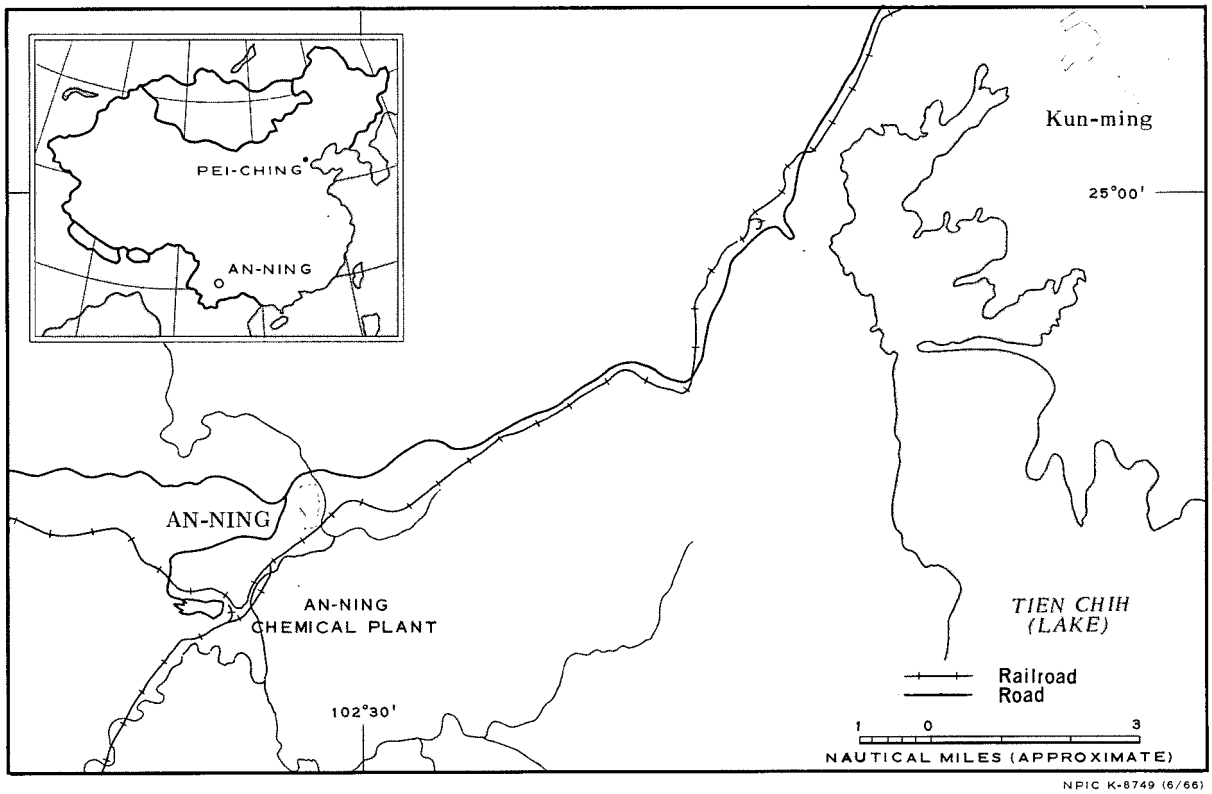

FIGURE 1. LOCATION MAP.

phase of construction, scheduled for completion in 1964, was begun to give the plant a capability for the manufacture of phosphorus to be used in fertilizers, insecticides, and organic synthetic products. 1/ [redacted]

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25X9

CHRONOLOGY

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The first photographic coverage of the plant was from KEYHOLE [redacted]

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At that time most of the major production buildings were present, although considerable construction activity was still in progress.

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Photographic coverage of the plant obtained in [redacted]

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seemed to indicate that the plant was capable of limited production of chlorine and caustic soda, and perhaps hydrochloric acid.

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Coverage of [redacted]

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revealed continued construction. Photography of [redacted]

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revealed a significant increase in construction. In the Service and Support Area, several buildings, some of which had been under construction since [redacted]

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were completed. Four other buildings in a construction area southeast of the plant were started, and a new roof was placed on the electrolytic cell building.

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The photography [redacted]

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revealed a new area of construction near the northeast end of the plant and the addition of building foundations to the construction area in the southeast part of the plant.

DESCRIPTION

The An-ning Chemical Plant is divided into 2 major parts: an eastern part which is the Chemical Production Area and a western part which apparently is a Service and Support Area. An Administration and Possible Laboratory Area is located south of the Service and Support Area.

The plant is served by a spur of the rail line from An-ning and Kun-ming which is probably used to transport the major portions of raw and finished materials. The security of the plant is not unusual; the outer perimeters of the plant are secured by a single fence. The main rail entrances are located at the western end of the plant; the main road entrances, at the eastern end.

Chemical Production Area

For descriptive purposes the Chemical Production Area has been divided into 5 major sections which are designated by letters A through E (Figures 2 and 3). Figure 4, a ground photograph of the plant taken in 1963, is a reproduction of a photograph which appeared in a Chinese magazine. 1/

Section A - Brine Preparation Section. Salt, the main raw material, is delivered by rail to a raw material warehouse (item 25, Figure 3). The salt is dissolved in water in the brine preparation building (item 24) and transferred into a thickener (item 23) before it is moved into the electrolytic cell building (item 17) of Area B.

Section B - Electrolysis Section. The brine from Section A is decomposed in the electrolytic cell building (item 17) into chlorine, dilute caustic soda, and hydrogen. The chlorine is moved into Section D, the chlorine liquefaction

section, and the dilute caustic soda is evaporated in Section E.

Section C - Possible Hydrochloric Acid and Bleaching Powder Section. Identifications of the buildings by function in this section are less reliable than those of buildings in Sections A & B. The production of bleaching powder, which is prepared by treating sodium hydroxide with gaseous chlorine, is suggested for item 14. The presence of white stains and piles of white material on the ground around the processing building (item 14) immediately south of the electrolytic cell building (item 17) is highly suggestive of bleaching powder production; furthermore, the processing building is connected directly to the pipe network and is conveniently located so that movement of raw materials would be at a minimum.

The buildings located at the south end of the plant (items 8, 9) are suitably located and of the approximate size for a hydrochloric acid plant. In addition there are 2 other buildings (items 15, 16) in this section for which a function cannot be determined. However, because they are located within the main production area and directly adjacent to the interconnecting pipelines these structures are designated processing buildings of an unidentified type in the table in Figure 3.

Section D - Chlorine Liquefaction Section. Chlorine gas from the electrolytic cell building (item 17) is dried, cooled, and liquefied in this section. The main chlorine liquefaction building (item 11) and a probable compressor building (item 10) are located in the extreme southwest corner of the production area.

Section E - Possible Caustic Evaporation Section. Caustic cell liquor from the cell building is believed to be held in the storage tanks (item 22) and then concentrated in the possible caustic soda evaporation building (item 21). The concentrated caustic soda is then shipped directly from the loading dock of the evaporation building in drumlike containers or used as a raw material in other parts of the plant.

Service and Support Area

The western portion of the plant consists of numerous buildings of various sizes and shapes, open storage areas, and construction activity. The area apparently functions as the general maintenance and warehouse area, possibly performing some packaging of finished products and some mechanical processing of either raw or finished materials.

Administration and Possible Laboratory Area

A large multistory building (item 3) located on the hill overlooking the plant serves as the administration building for the plant. A separately secured area containing 2 buildings (items 2, 5) and a water tower located upslope from the administration building possibly serves as the laboratory area for the plant.

NEW AREAS OF CONSTRUCTION

Two new areas of construction, 1 along the northeast corner of the plant, the other at the southeast edge of the plant, have appeared since [redacted] 25X1D
In the southeast area 3 buildings were completed during [redacted] 25X1D and the foundation for another building was observed on [redacted] 25X1D
The northeast area of construction contains 3 buildings and foundations for 2 others. Because the buildings are still under construction, the function of either area cannot yet be determined. Either of these areas could be the site of the phosphorus chemicals production facilities.

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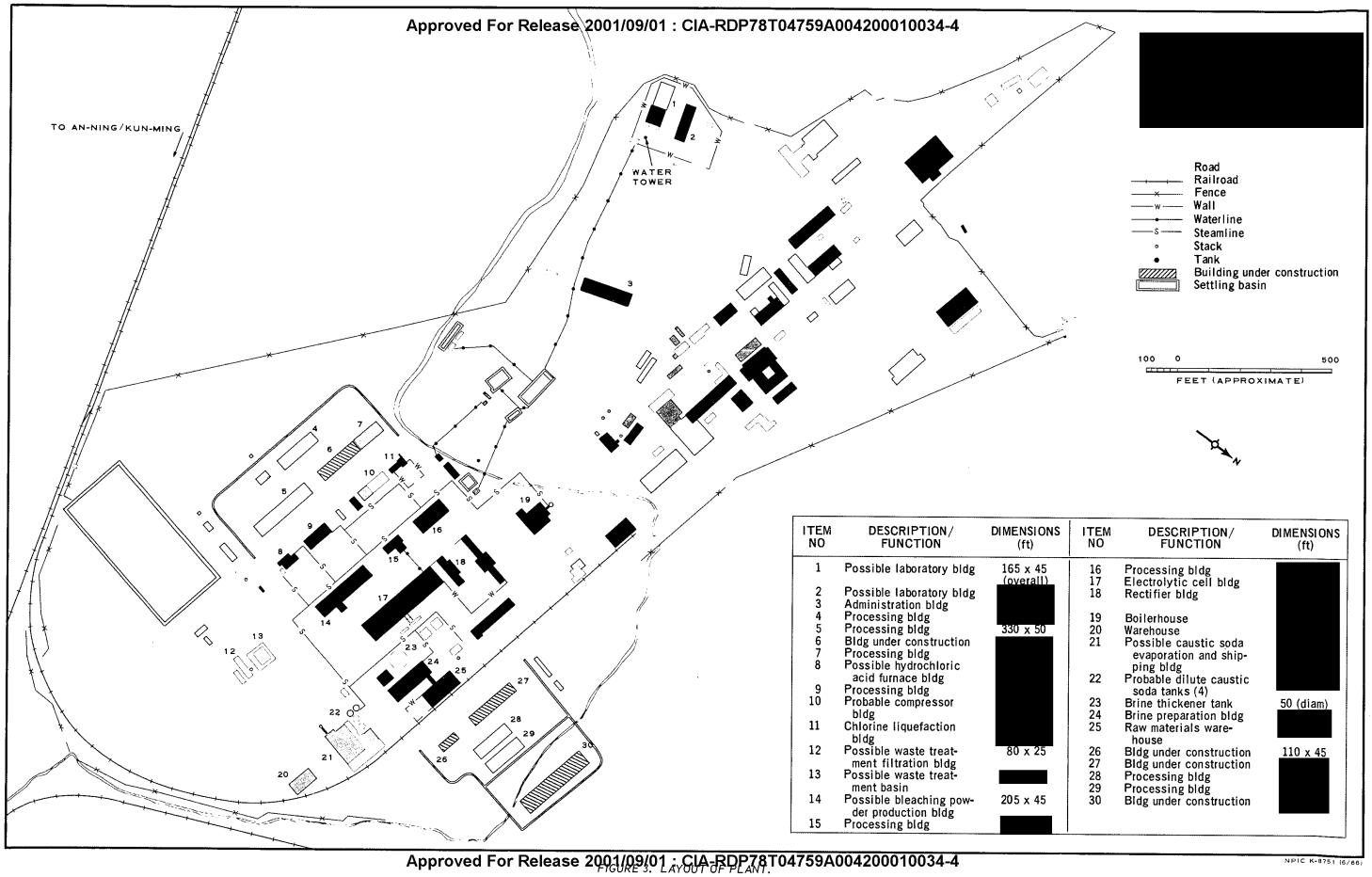

ITEM NO	DESCRIPTION/ FUNCTION	DIMENSIONS (ft)	ITEM NO	DESCRIPTION/ FUNCTION	DIMENSIONS (ft)
1	Possible laboratory bldg	165 x 45 (overall)	16	Processing bldg	
2	Possible laboratory bldg		17	Electrolytic cell bldg	
3	Administration bldg		18	Rectifier bldg	
4	Processing bldg		19	Boilerhouse	
5	Processing bldg	330 x 50	20	Warehouse	
6	Bldg under construction		21	Possible caustic soda evaporation and shipping bldg	
7	Processing bldg		22	Probable dilute caustic soda tanks (4)	
8	Possible hydrochloric acid furnace bldg		23	Brine thickener tank	50 (diam)
9	Processing bldg		24	Brine preparation bldg	
10	Probable compressor bldg		25	Raw materials warehouse	
11	Chlorine liquefaction bldg		26	Bldg under construction	110 x 45
12	Possible waste treatment filtration bldg	80 x 25	27	Bldg under construction	
13	Possible waste treatment basin		28	Processing bldg	
14	Possible bleaching powder production bldg	205 x 45	29	Processing bldg	
15	Processing bldg		30	Bldg under construction	

FIGURE 3. LAYOUT OF PLANT.

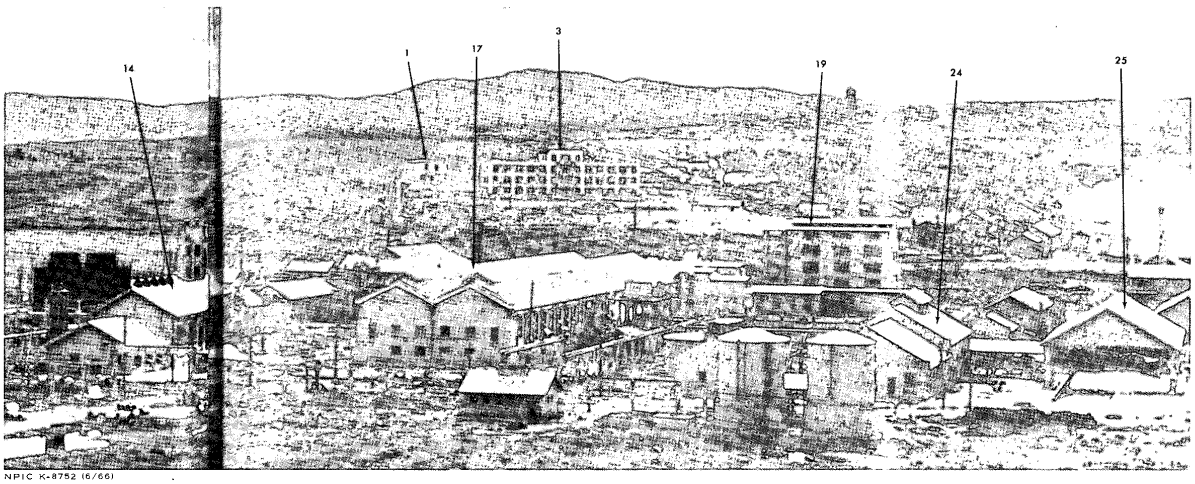

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FIGURE 4. GROUND PHOTOGRAPH OF AN-NING CHEMICAL PLANT (VIEW TOWARD WEST), 1963. The numbered buildings were selected because they are most easily recognized on Figures 2 and 3; the numbers are keyed to Figure 3.

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REFERENCES

[redacted]

MAPS OR CHARTS

AMS. Series L 500, Sheet NG 48-13, 1st ed, 1963, scale 1:250,000 (UNCLASSIFIED)

DOCUMENTS

1. Chuang, Kuang-ming. "New Chemical Works in Yunnan," *China Reconstructs,* Vol XII, No 3, Mar 63, pp 8-9 (UNCLASSIFIED)

25X1C [redacted]

REQUIREMENT

25X1A [redacted]

NPIC PROJECT

11420/65